

**ATTACHMENT 19**  
**Recompletion Procedures**

**Hilmar Cheese Company  
Disposal Well Remedial Procedure**

1. Install a 500 bbl portable tank and return line from tbg side to tank. Fill tank with 300 bbls wastewater.
2. MIRU 1.5" CTU, rig pump with pit and shaker screen, acid pump, and transports loaded with 5,040 gal 15% HCl, 3,360 gal 12-3% HCl-HF, and 3,360 gal 5% HCl. Acid to contain friction reducer, clay stabilizer, and be corrosion inhibited and iron sequestered to 3000 ppm for 6 hours @ 150 °F.
3. Manifold from portable tank to supply rig pump and acid pump, and to take returns from tbg during clean out operations. Pressure csg to 200# and monitor throughout operations.
4. Pressure test coiled tubing reel to 5,000 psi for 5 minutes. Install hydrablast jet bullet on coiled tubing end, and pump through CTU to well cellar to @ 1.5 BPM to establish CTU friction. Nipple up CTU to wellhead, pressure test CTU & wellhead connections against closed swab & master valves to 2,000 psi.
5. Install flowline from tbg-tbg annulus to portable tank. Install pressure gauges on csg, CTU and tbg-tbg annulus and monitor gauges throughout jetting operations.  
***Maximum STP = 5,000 psi @ 1.5 BPM. Maximum tbg/tbg annulus pressure while acidizing slots is 1,200#; be prepared to spot/soak acid if slots do not break down.***
6. RIH with coiled tbg to ~3,500'. Start pumping lease water down the CTU @ 1.5 BPM while taking returns up tbg/tbg annulus to portable tank. Continue pumping while RIH @ 30'/min to 4,150'.
7. Clean out well to ED and circulate hole clean taking returns over shaker screen to rig pump pit. Switch operations to acid pump once returns are clean.
8. Load CTU with 15% HCl; close tbg/tbg annulus. Reciprocate CTU across the interval @ 4,150-3,350' while pumping acid @ 1.5 BPM & moving CTU @ 30'/min. Make 3 passes (Up/Down/Up); estimated stage pump time is ~81 minutes to jet 120 bbls (5,040 gal) 15% HCl across the injection zone.
9. Displace 15% HCl with 12-3% HCl-HF acid. Continue reciprocating tubing across injection zone making two passes (Down/Up) while jetting slots with 3,360 gal 12-3% HCl-HF. Displace 12-3% acid with 5% HCl while pumping, then make two more passes (Down/Up) while jetting slots with 5% HCl. Displace 5% HCL with wastewater.
10. Make two final passes (Down/Up) while jetting slots with wastewater to displaced acid from wellbore. POOH, RDMO workover equipment. Return well to disposal service.

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**Cost Estimate**

<u>ITEM:</u>	<u>COST:</u>
Tank Rental	\$ 1,200
Coiled Tubing Services	\$12,000
Rig Pump Rental	\$ 1,400
Workover Supervision	\$ 3,000
Contract Labor	\$ 1,500
<u>Acid Services</u>	<u>\$12,400</u>
<b>Total Job Costs</b>	<b>\$31,500</b>
<b>20% Contingency</b>	<b>\$ 6,300</b>
<b>Total AFE Costs</b>	<b>\$37,800</b>